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Electricity metering - Data exchange for meter reading, tariff and load control - Part 52: Communication protocols management distribution line message specification (DLMS) server

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Comptage de l'électricité - Echange de données pour la lecture des compteurs, le contrôle des tarifs et de la charge - Partie 52: Serveur de messagerie de ligne de distribution (DLMS) d'administration des protocoles de communication

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33.040.40	Podatkovna komunikacijska omrežja	Data communication networks
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

Part 52: Communication protocols management distribution line message specification (DLMS) server

FOREWORD

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- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard, for example “state of the art”.

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

IEC 62056-52, which is a technical report of type 2, has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

The text of this technical report is based on the following documents:

Committee draft	Report on voting
13/1132/CDV	13/1168/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This document is issued in the type 2 technical report series of publications (according to G.3.2.2 of part 1 of the IEC/ISO Directives) as a "prospective standard for provisional application" in the field of data exchange for meter reading, tariff and load control because there is an urgent requirement for guidance on how standards in this field should be used to meet an identified need.

This document is not to be regarded as an "International Standard". It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to IEC Central Office.

A review of this type 2 technical report will be carried out not later than three years after its publication, with the options of either extension for a further three years or conversion to an International Standard or withdrawal.

ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

Part 52: Communication protocols management distribution line message specification (DLMS) server

1 General

1.1 Scope

This technical report provides all the information specific to the management DLMS Server of the protocols described in IEC 62056-31, IEC 62056-41 and IEC 62056-51. This Server remains in conformity with the DLMS model (see IEC 61334-4-41) in all respects, and differs only by

– the fact that it is mandatory for all real equipment accessible by these protocols,

– its predefined address in the form of a particular Service Access Point (TSAP="0000000000"B) of the Transport sublayer of the Application layer described in IEC 62056-51.

This Server can thus be characterized as a VDE "communication protocols management DLMS Server" in a companion specification whose presentation conventions are consistent with the ASN.1 [1] standard.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this technical report. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this technical report are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 61334-4-41:1996, *Distribution automation using distribution line carrier system – Part 4: Data communication protocols – Part 41: Application protocols – Distribution Line Message Specification*

IEC 62056-31, — *Electricity metering – Data exchange for meter reading, tariff and load control – Part 31: Data exchange using local area networks type 1* [2]

IEC 62056-41:1998, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 41: Data exchange using wide area networks type: Public switched telephone network (PSTN) with Link+ protocol*

IEC 62056-51:1998, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 51: Application layer protocols for meter data exchange*

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1) ASN: Abstract Syntax Notation.

2) To be published.

1.3 Companion standard

This technical report is completely in accordance with the recommendations from the DLMS companion standard No. 1 for remote reading of meters.

2 Conformance block

The conformance block parameter (see IEC 61334-4-41) is used for a precise definition of the facilities (DLMS services or special functions) requested from the Server by the Client during the initialisation of an application association.

Table 1 gives the minimum value of this block for the communication protocols management DLMS Server.

Table 1 – Conformance block minimum value

Facility	Bit(s)
GetDataSetAttribute	0
GetTIAttribute	0
GetVariableAttribute	0
Read	1
Write	1
UnconfirmedWrite	0
ChangeScope	0
Start	0
Stop, Resume	0
MakeUsable	0
DataSet Load	0
Selection in GetNameList	0
Detailed Access	00
Multiple Variable List	0
DataSet Upload	0

3 DLMS objects

The communication protocols management DLMS Server does not contain any TI objects.

3.1 VDE Object: VDEManagement

```
VDEManagement::=VDE {
    vDE-handler          "0000000000"B,     -- TSAP
    vDE-type             1,                 -- VDE type management
    serial-number        "serial-number",   -- to be defined
    vendor-name          "vendor-name",     -- defined by the manufacturer
    Model                "model",           -- defined by the manufacturer
    version-number       nn,                -- defined by the manufacturer
    Resources            "",
    list-of-VAA          (7),               -- VAAManagement
    Status               READY }
```

3.2 DS Object: DSManagement

DSManagement::=DataSet {

dataSet-name	4,	-- ObjectClass=4
scope-of-access	VDE-specific,	
scope-may-change	FALSE,	
data-set-content	"",	-- the DataSet is empty
loadable	FALSE,	
list-of-task-invocations	(),	
state	READY }	

3.3 VAA Object: VAAManagement

A VAA object named VAAManagement is predefined and corresponds to the value "0007"H of the Client-type (see IEC 62056-51).

VAAManagement::=VAA {

vAA-name	7,	-- ObjectClass=7
scope-of-access	VDE-specific,	
executive	FALSE,	
abortable	FALSE,	
list-of-named-variables	(0,	-- BufferPoolSize
	8,	-- ApplicationContextNameList
	16,	-- FatalError
	24,	-- ApplicationList
	32,	-- ConfidentialItem
	40,	-- CallingIdentifierList
	48,	-- ForAlarmClientList
	56,	-- ModificationCount
	64,	-- ListeningWindow
	72,	-- LastSuccessfulInitiateList
	80,	-- SecondaryAddress
	88,	-- PrimaryAddressList
	96),	-- TabiList
list-of-named-variable-lists	(),	
list-of-message-boxes	() }	

3.4 Variable Objects

The communication protocols management DLMS Server does not contain any Named Variable List or Message Box objects.

3.4.1 Definitions of general types

These definitions concern some of the general types offered by DLMS (see IEC 61334-4-41).

Integer8	::= INTEGER(-128..127)	-- Integer on 8 bits
Unsigned8	::= INTEGER(0..127)	-- Unsigned on 8 bits
Unsigned16	::= INTEGER(0..32 767)	-- Unsigned on 16 bits
Unsigned32	::= INTEGER(0..2 147 483 647)	-- Unsigned on 32 bits